UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,360	03/25/2005	Jaap Andre Haitsma	2167.006US1	6172

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EXAMINER
SCHWARTZ, DARREN B

ART UNIT	PAPER NUMBER
4193	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/529,360	HAITSMA, JAAP ANDRE
	Examiner	Art Unit
	DARREN B. SCHWARTZ	4193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>25 March 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-7</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-7</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>25 March 2005</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>03-25-05 04-17-06 10-22-07 12-18-07</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   The title of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed. The following title is

suggested: "Speed-Change Resistant Audio Fingerprinting using Auto-correlation."

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

3.   Claim 7 is rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter. Claim 7 is directed to a program, *per se*. The

body of the claim is directed to the logic steps of the program itself, although, the claim

recites memory, no actual structure of the memory is being recited. Furthermore, no

actual implementation of the machine/computer is recited into the claim and no actual

execution of the program has been implemented. The claim is basically reciting what

program steps a program can do. Therefore, it is treated as a program alone.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-3, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Seok et al. (U.S. Pat Pub 2002/0078359 A1) hereinafter referred to as Seok, in

view of Hannigan et al. (U.S. Pat 6674876 B1), hereinafter referred to as Hannigan.

        Re claims 1 and 6: Soek teaches a method of extracting a fingerprint from a

media signal, an apparatus for extracting a fingerprint from a media signal (¶8, ¶10,

¶19), to perform the steps of: extracting from said media signal a sequence of samples

of a given perceptual property of the signal (¶4; ¶33, lines 5-7), and deriving from said

sequence a binary sequence constituting said fingerprint (Fig 3, "COPYRIGHT

INFORMATION;" col 3 of ¶32), characterized in that the method comprises the steps of:

        subjecting the sequence of property samples [Fig 3, "WATERMARKED AUDIO

SIGNAL"] to an auto-correlation function [Fig 3, elt 203] (202) to obtain a sequence of

auto-correlation values (Fig 3, elts 203 & 204; ¶32, lines 1-3);

        comparing (105) said auto-correlation values with respective thresholds (¶32,

lines 3-7);

        However, Seok does not teach representing the results of said comparisons by

respective bits of the fingerprint.

        Hannigan teaches representing the results of said comparisons by respective bits

of the fingerprint (col 7, line 57 – col 8, line 8).

        It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have modified the Seok reference to represent the fingerprint

itself as a result of the actual logical comparisons, as taught by Hannigan, for the

purpose of providing Seok the ability of data integration by embedding data into the media (see Hannigan: col 14, lines 40-45).

Re claim 2: The combination of Seok and Hannigan teach said step of subjecting the sequence of property samples to an auto-correlation function comprises correlating a sub-sequence of property samples with the complete sequence of property samples (Hannigan: col 9, lines 28-37; col 10, lines 38-43; col 14, lines 60-64).

Re claim 3: The combination of Seok and Hannigan teach said step of subjecting the sequence of property samples to an auto-correlation function further includes down-sampling (204) the sequence of auto-correlation values to obtain a desired number of auto-correlation values (Hannigan: col 9, lines 28-37; col 10, lines 38-43; col 14, lines 60-64).

Re claim 7: Soek teaches deriving from a received media signal a sequence of samples of a given perceptual property of the signal (¶4; ¶33, lines 5-7); subjecting the sequence of property samples to an auto-correlation function to obtain a sequence of auto-correlation values (Fig 3, elts 203 & 204; ¶32, lines 1-3);

However, Soek does not teach representing the results of said comparisons by respective bits of a fingerprint.

Hannigan teaches representing the results of said comparisons by respective bits of a fingerprint (col 7, line 57 – col 8, line 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the Seok reference to represent the fingerprint itself as a result of the actual logical comparisons, as taught by Hannigan, for the

purpose of providing Seok the ability of data integration by embedding data into the

media (see Hannigan: col 14, lines 40-45).

As to the computer program, Hannigan also teaches a computer program (Figure

6: elts 602A, 602B, 602C & 602D). Since no specific type of computer program is being

recited in the claim, it is read as a computer program of handling data in general.

6.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seok et

al. (U.S. Pat Pub 2002/0078359 A1) hereinafter referred to as Seok, in view of

Hannigan et al. (U.S. Pat 6674876 B1), hereinafter referred to as Hannigan, in further

view of Kenyon et al (U.S. Pat Pub 2002/0023020 A1), hereinafter referred to as

Kenyon.

Re claim 4: The combination of Seok and Hannigan teach all the limitations of

claim 1 as previously discussed.

However, Seok and Hannigan do not teach said step of deriving from said media

signal a sequence of perceptual property values comprises dividing an audio signal into

sub-bands and computing the energies of said audio sub-bands.

Kenyon teaches said step of deriving from said media signal a sequence of

perceptual property values comprises dividing an audio signal into sub-bands and

computing the energies of said audio sub-bands (¶41).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have modified the combination of Seok and Hannigan references

to divide an audio signal into sub-bands and compute the energies of the audio sub-

bands, as taught by Kenyon, for the purpose of easy recognition of media stored in a database (see Kenyon: ¶39).

7.   Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seok et al. (U.S. Pat Pub 2002/0078359 A1) hereinafter referred to as Seok, in view of Hannigan et al. (U.S. Pat 6674876 B1), hereinafter referred to as Hannigan, in further view of Hobson et al (U.S. Pat 6633653 B1), hereinafter referred to as Hobson.

Re claim 5: The combination of Seok and Hannigan teach all the limitations of claim 1 as previously discussed.

However, Seok and Hannigan do not teach said step of deriving from said media signal a sequence of perceptual properties comprises dividing an image into blocks and computing the luminances of said image blocks.

Hobson teaches said step of deriving from said media signal a sequence of perceptual properties comprises dividing an image into blocks and computing the luminances of said image blocks (col 2, line 64 - col 3, line 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the combination of Seok and Hannigan references to divide an image into blocks and compute the luminances of said image blocks, as taught by Hobson, for the purpose of providing image watermarking and easy recovery of watermarked images.

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Haitshma et al. "Speed-Change Resistant Audio Fingerprinting using Auto-correlation," Philips Research laboratories Eindhoven, IEEE, 2003, pages 728-731.

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darren B. Schwartz whose telephone number is 571-270-3850. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Taghi Arani can be reached on 571-272-3787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DS

/Taghi T. Arani/
Supervisory Patent Examiner, Art Unit 4193
4/21/2008